Advanced Information Engineering Services

A GENERAL DYNAMICS COMPANY

“Viewer for XML” (VXML) and the Air Force Common Viewer (AFCV) – An Update

Agenda

- VXML Overview/Review
- The ETIMS Complex Enterprise
  - Integration of VXML with JATDI and GCSS
  - Relationship to Intergraph JATDI
- Functional additions to VXML
- Future VXML features and status
- Conclusion.

What is VXML?

The Viewer for eXtensible Markup Language (VXML) is a standards-based ***content management application*** for the storage and electronic presentation of ***large volumes*** of technical documentation ***on-line and web-enabled.***

The software shares a ***core code base*** with the General Dynamics-developed Air Force Common Viewer and can be cost-effective for the Navy as a existing GOTS package with selected COTS components and necessary customization.

components and necessary customization.

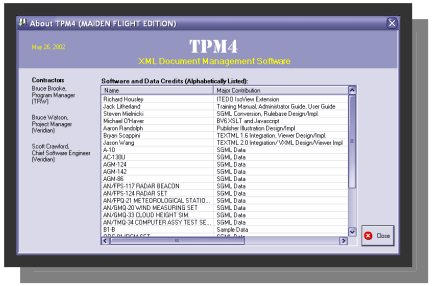
A Brief History of VXML

- AWACS/E-3 Requests Ideas for Managing TOs - 1997
  - RSIP inserting several thousand pages of tech data – drowning in paper
  - Veridian (now GD-AIES) recommends XML - 1998
- AWACS/E-3 TPM v1 - March 2000
- AWACS/E-3 TPM v2 - August 2000
- A-10/F-16 AFCV v0.1 - March 2002
- AFCV v1.0 delivered July 2002
- VXML v1.0 created for commercial market – Oct 2002
- AFCV v2.0 delivered March 2003
- GD-AIES joins Intergraph Team, wins ETIMS contract
- AFCV v2.2.1 delivered January 2004

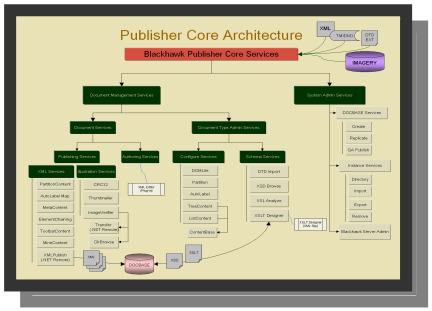
VXML Technologies

- .NET Framework provides robust web performance
  - System tested with 500 simultaneous users and no drop-outs.
- XML/XSL
  - W3C Standard supported throughout.
  - Currently supports Type I documents (linear “book” presentation of data).
  - Future support of Type II documents (conditional branching within books, DB-oriented) planned.

USAF Continuing Investment



AFCV
Spiral I & II
(2001 - Present)



Warner-Robins
CITOMS
(2001 - 2002)

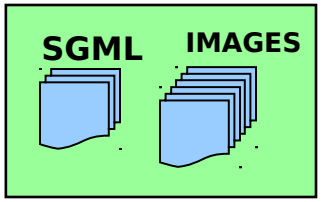
AWACS / E-3
Class III
Engine
(1999 - 2001)

etims
(2002 – Present)

Design Philosophy

- Critically Important to Retain the “Book” Paradigm
- Provided refined Search Features
- No RDBMS—native XML repository

Current VXML Architecture



TO Source

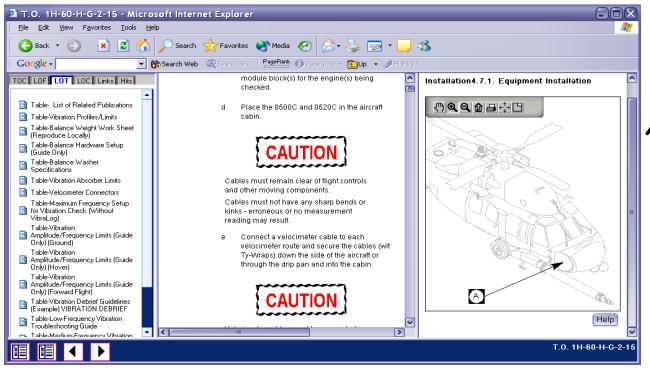
Publishing Module
- Converts to XML
- Partitions Document to Web-friendly size
- Mines Data for TO Navigation
- Resolves Int./Ext. Links
- Creates Image Thumbnails

Document Base

XML Repository

IMAGES

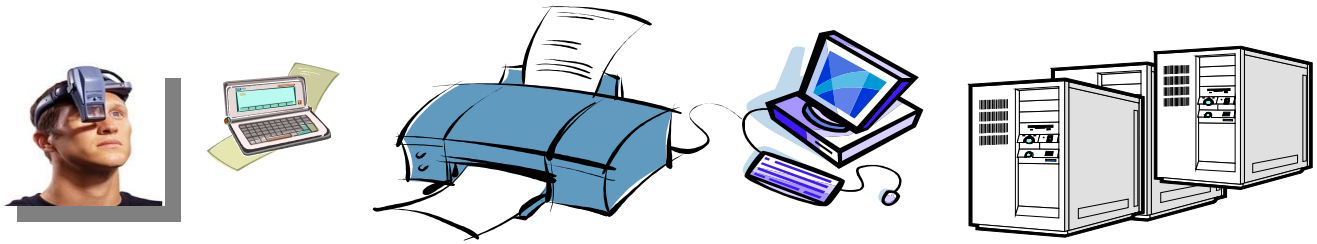
THUMBS



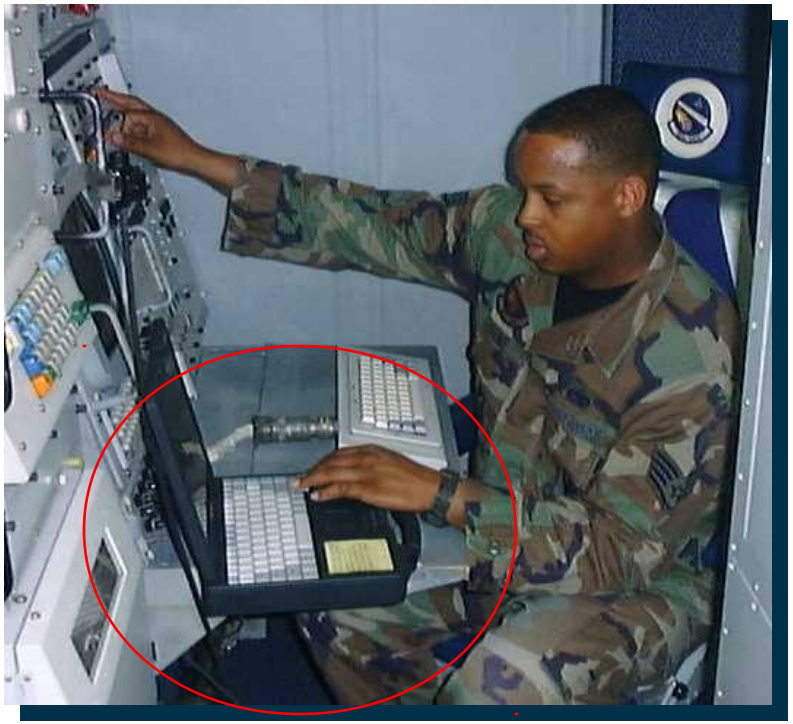
User's View

Blackhawk Viewer Services
- **Web Enabled**
- **.NET remoting net-enabled**
- **Manages User Requests for Documents**
- **Robust query support**
- **On-the-fly XML to HTML conversion for Client Simplicity**

IETM Viewer - Possibilities



- Browser-Based
- Lightweight Web Server Included
- Built Using IXIASoft's TEXTML 2.2 Engine
- Runs on practically any PC Compatible Device
- Printing of Imagery and Text Supported



The ETIMS Enterprise

(Enhanced Technical Information Management System)

Web-based, Warfighter-focused, scalable User Interface to:

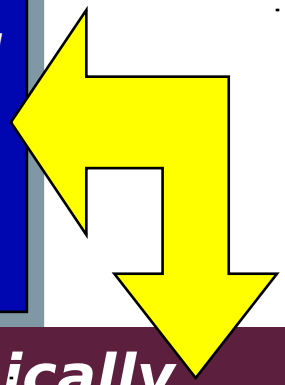
- **Distribute TOs**
  - **Locate / Search**
  - **Requisition / Order**
  - **Subscribe**
  - **View**
- **Manage TO Content**
  - **Production**
  - **Validation**
  - **Release**
  - **Dissemination**
- **Manage Change**
  - **Recommend**
  - **Validate**
  - **Approve / Reject**

VXML / AFCV has been designated by the Air Force as the ETIMS viewing solution for TMSS-compliant TO data.

The ETIMS Enterprise (Cont)

Relationship to JATDI:

"The Joint Aviation Technical Data Integration, or JATDI, concept defines a technical data integrated environment whereby technical data and maintenance expertise are more readily available and accurate as KNOWLEDGE for the warfighter, by a cheaper and faster means."



"ETIMS VISION: Up-to-date, technically accurate, and user friendly TOs at an acceptable price"

VXML has been modified for ETIMS to use JATDI / JKCS as the synchronization module for maintaining currency of data.

Future VXML Features

- Planned Security Enhancements will
  - Support independent deployment of the viewing system,
  - Allow operation as a web-enabled entity on DoD networks,
  - Eliminate dependence on proprietary web server,
  - Provide standard HTTPS security for web/net communications.

Future VXML Features

- Support for Type II TMs will be provided by
  - Adding support for 87268, -269 DTDs,
  - Adding support for ATA i2200 and AECMA 1000,
  - Develop necessary XSL stylesheets and software modifications to support IETMs.
- With these features, VXML will
  - Support both static and interactive TMs written in standard SGML,
  - Provide conditional hyperlinks based on situational data.

Future VXML Features

- VXML Access to Databases
  - Develop standard interface to access logistics databases (Oracle, SQL, etc.),
  - Integrate TM viewing with ordering of parts and supplies,
  - Provide interface within the VXML UI to invoke the logistics database desired with a query for a selected part designated within the IETM being viewed.

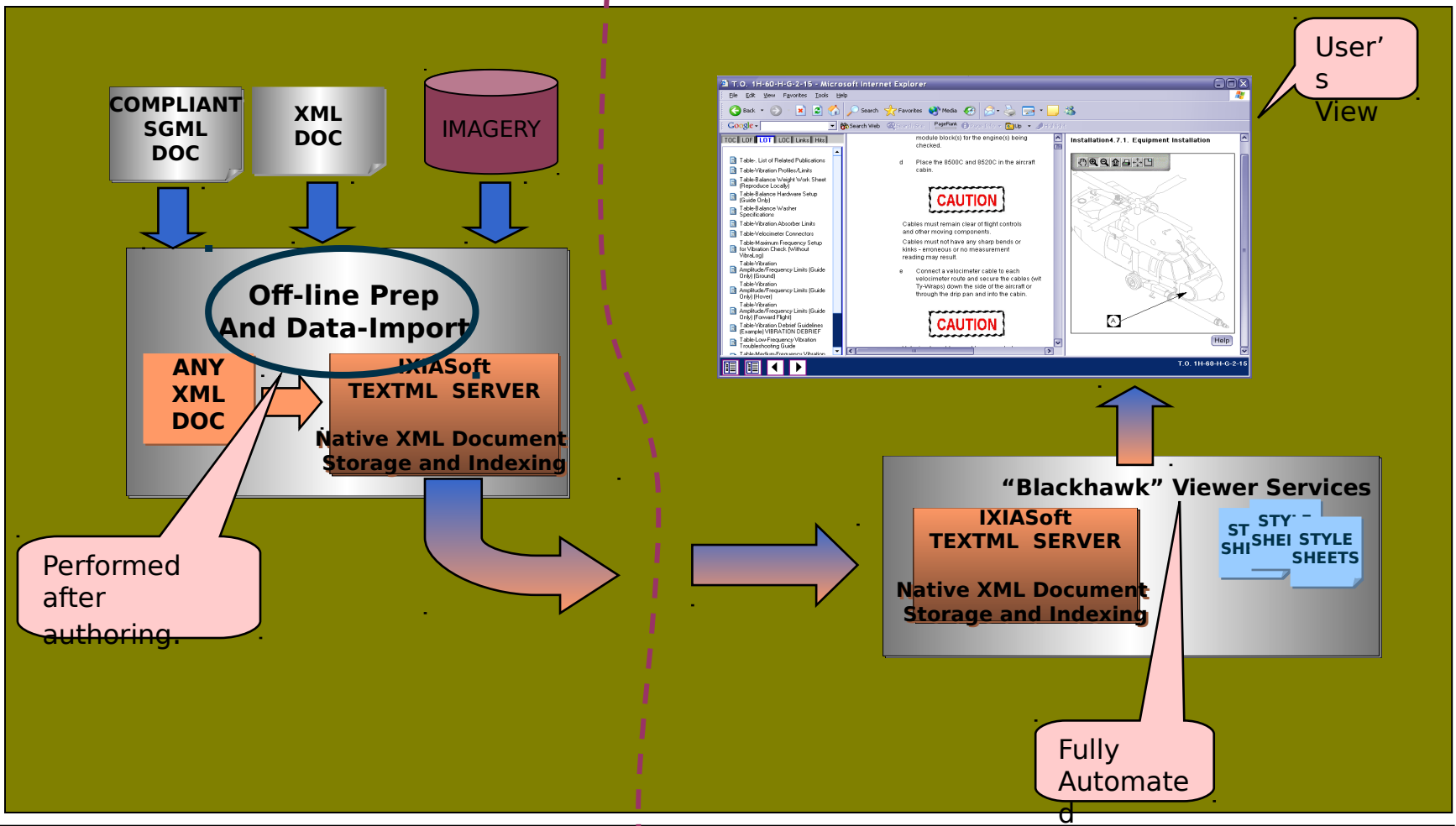
Conclusion

General Dynamics can provide VXML as the USN's next TM viewing solution

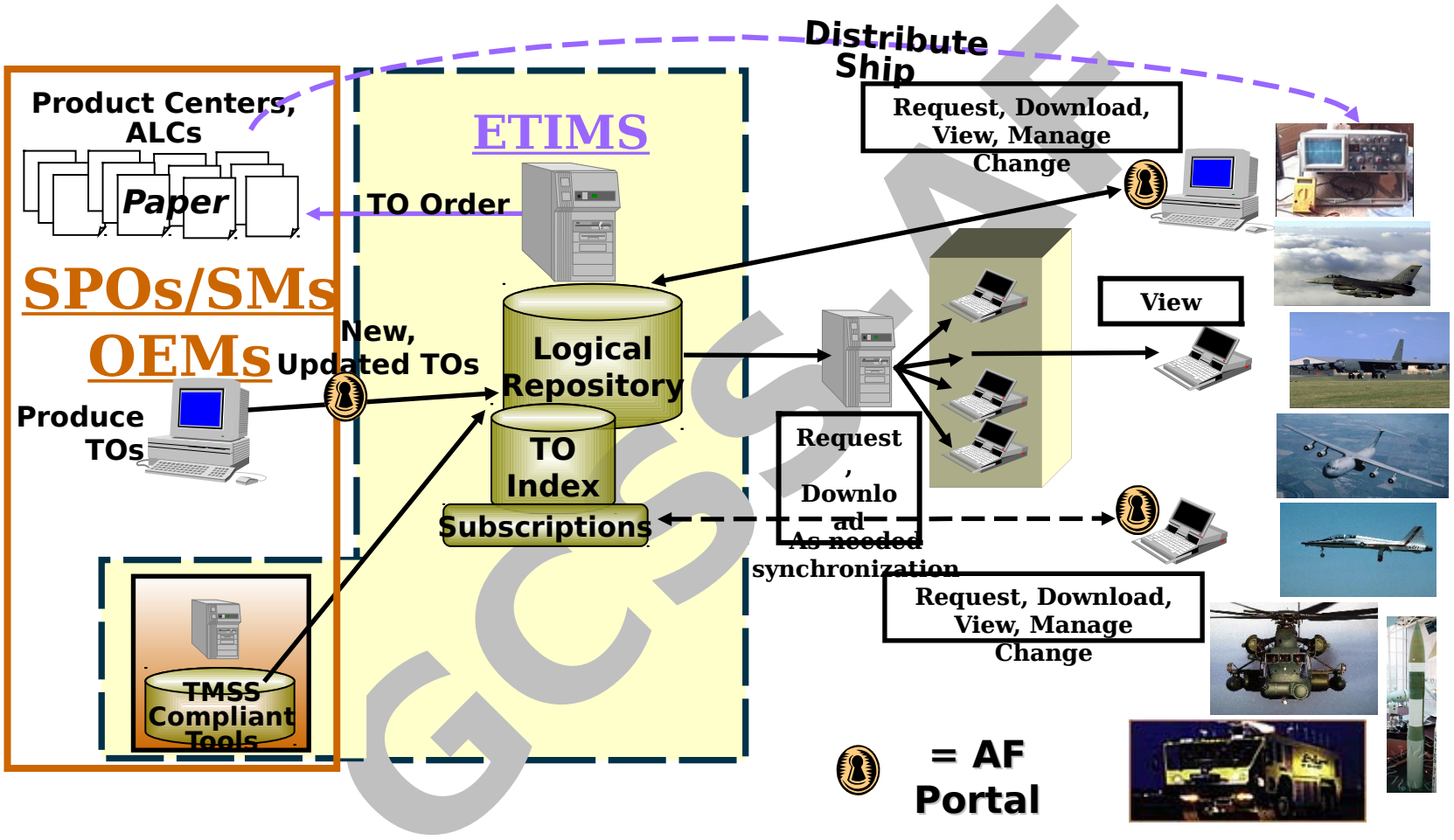
- Proven solution working today.
- Leverages leading-edge COTS and GOTS.
- Flexible and scalable to Navy requirements.
- Can support JATDI philosophy and components.
- Interfaces proven in Air Force's ETIMS program.
- Will support both Type I and Type II IETMS in a web-based or stand-alone environment.

Backups

Architecture

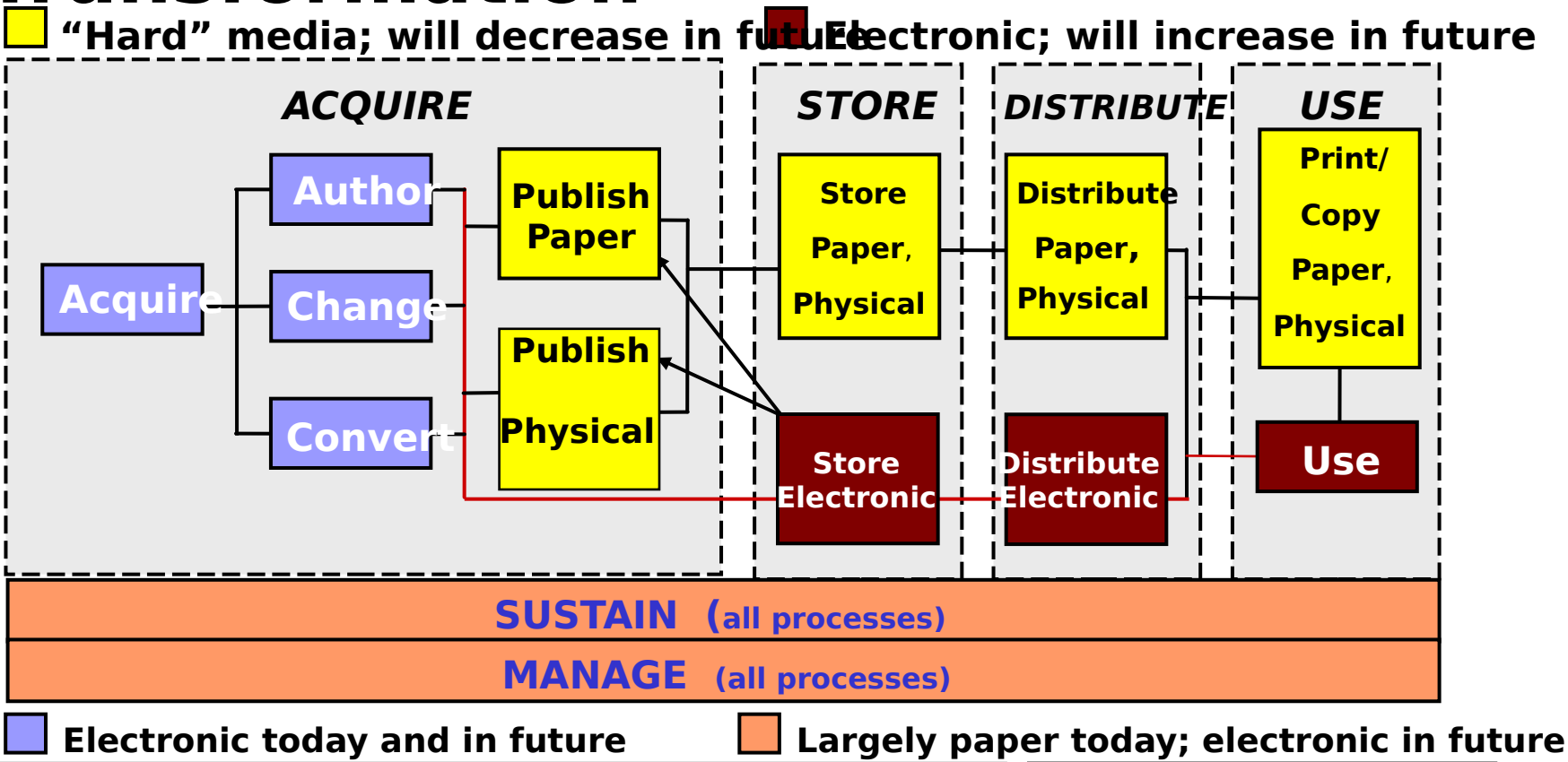


ETIMS Architecture



GCSS-AF

The ETIMS Process Transformation



Physical = physical digital media = CD, DVD, Floppy, Etc

Electronic = Electrons/waves; No "hard" media (physical paper)

Grouped (Major) processes are in caps